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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,271	01/25/2001	Tsukasa Yajima	PNET.009D	3802

7590 01/10/2003  
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EXAMINER	
MAI, ANH D	
ART UNIT	PAPER NUMBER
2814	

DATE MAILED: 01/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/768,271

Applicant(s)

YAJIMA, TSUKASA

Examiner

Anh D. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2002.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-9 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-9 and 11-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 31 October 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Amendment*

1. Amendment filed October 31, 2002 has been entered as Paper No. 13. Claims 6, 11 and 16 have been amended. Claims 6-9 and 11-19 are pending.

### *From Previous Office Action*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "insulating layer formed on the substrate, first and second gate, side walls, field oxide and protective layer; contact hole formed through the insulating layer and connecting wire coupled to the gate through the contact hole" **must be shown or the feature(s) canceled** from the claim(s). No new matter should be entered, as previously applied.

### *Response to Amendment*

3. The amendment filed October 31, 2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "the contact hole 52 and wiring 54 connect to the gate".

Applicant is required to cancel the new matter in the reply to this Office Action.

### *Drawings*

4. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on October 31, 2002 have been **disapproved** because they introduce new matter into the

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drawings. 37 CFR 1.121(a)(6) states that no amendment may introduce new matter into the disclosure of an application. The original disclosure does not support the showing of "the contact holes 52 and the connecting wire 54 are directly on the gate".

As best understood by the examiner, the semiconductor device comprises: an insulating layer, contact hole and wiring.

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 6-9 and 11-19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yoo et al. (U.S. Patent No. 5,605,853) (cited previously).

With respect to claim 6, as best understood by the examiner, Yoo teaches a semiconductor device as claimed including:

first and second gates (16) formed on an active region of a substrate (10), the first and second gates consisting of a refractory metal layer (28) on a polysilicon layer (16);

a field oxide (12) formed on the substrate (12) between the first and second gate (16);

side walls (20) formed on side surfaces of the gates (16), the side walls being a silicon oxide film;

a protective layer (21) formed on the field oxide (12), the protective layer being a material different than the field oxide;

an insulating layer (38) formed on the substrate (10), the gates (16), the side walls (20), the field oxide (12) and the protective layer (21);

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a contact hole formed through the insulating layer (38); and  
a connecting wire (40) coupled to the gates (16) through the contact hole. (See Fig. 7, col. 3-5).

Product by process limitation:

The expression "to prevent overetching of said field oxide" (claims 6, 11 and 16) is taken to be a product by process limitation and is given no patentable weight. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not. The same reason also applied to claims 11 and 16.

Note that, since the protective layer (21) of Yoo is formed on the field oxide (12), thus, the protective layer (21) is capable of preventing overetching of the field oxide as well.

With respect to claim 8, the protective layer (21) of Yoo is formed on the field oxide (21) only.

With respect to claim 11, as best understood by the examiner, Yoo teaches a semiconductor device as claimed including:

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a gate (16) formed on an active region of a substrate (10);  
a field oxide (12) formed on the substrate adjacent the active region;  
a protective layer (21) formed on the field oxide (12), the protective layer being a material different than the field oxide;  
an insulating layer (38) formed on the substrate (10) including the gate (16), the field oxide (12) and the protective layer (21);  
a contact hole formed through the insulating layer (38); and  
a connecting wire (40) coupled to the gate (16) through the contact hole, the protective layer (21) being formed on the field oxide (12) only. (See Fig. 7, col. 3-5).

With respect to claim 14, the gate (16) of Yoo further comprises side walls (20) formed on side surface of the gate (16), the side walls being covered by the insulating layer (38).

With respect to claim 16, as best understood by the examiner, Yoo teaches a semiconductor device as claimed including:

a gate (16) formed on an active region of a substrate (10), the gate (16) consisting of a refractory metal layer (28) on a polysilicon layer (16);

side walls (20) formed on side surfaces of the gates (16), the side walls being a silicon oxide film;

a field oxide (12) formed on the substrate (12) adjacent the active region;

a protective layer (21) formed on the field oxide (12), the protective layer being a material different than the field oxide;

an insulating layer (38) formed on the substrate (10), the gates (16), the side walls (20), the field oxide (12) and the protective layer (21);

a contact hole formed through the insulating layer (38); and

a connecting wire (40) coupled to the gate (16) through the contact hole, the protective layer (21) being formed on the field oxide (12) only (See Fig. 7, col. 3-5).

With respect to claims 7, 12, 17, the protective layer (21) is a polysilicon layer.

With respect to claims 9, 13, 18, the gate (16) is a MOSFET gate.

With respect to claims 15, 19, the semiconductor device of Yoo further comprising an additional gate (16) formed on the substrate (10), the field oxide (12) being formed on the substrate between the gate (16) and the additional gate (16).

#### *Response to Arguments*

6. Applicant's arguments filed October 31, 2002 have been fully considered but they are not persuasive.

#### Drawings

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on October 31, 2002 have been **disapproved**, as discussed above.

#### Rejection Under 35 U.S.C. 102(b)

Applicant concludes that layer 21 is not specifically described as formed on FOX layer

[12].

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However, viewing Fig. 2, one having ordinary skill in the art should conclude, *without any reasonable doubt*, that layer 21 is formed on FOX layer 12. Since layer 21 of Yoo is formed on the field oxide 12, layer 21 is clearly capable of preventing the field oxide 12 from overetching. Furthermore, the expression "to prevent overetching of said field oxide", as discussed above, is taken to be a product-by-process limitation and is given no patentable weight.

### Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh D. Mai whose telephone number is (703) 305-0575. The examiner can normally be reached on 8:30AM-5:00PM.

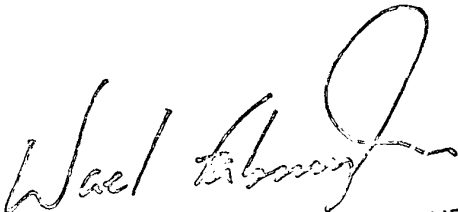


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A.M  
January 3, 2003

  
SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER 2000